CALIFORNIA
Water Boards

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SECRETARY FOR
ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

November 16, 2017

Mr. Jeff Appel
Rapid Gas, Incorporated
1418 Amherst Avenue, Ste. #1
Los Angeles, CA 90025

Certified with return receipt
7016 1970 0000 9835 9285

GENERAL WASTE DISCHARGE REQUIREMENTS FOR IN-SITU GROUNDWATER REMEDIATION AND GROUNDWATER RE-INJECTION
FORMER RAPID GAS STATION #35
4558 WEST IMPERIAL HIGHWAY, HAWTHORNE
(ORDER NO. R4-2014-0187, SERIES NO. 009; CI NO. 10102) (UST FILE NO. R-16466)

Dear Mr. Appel:

We have completed our review of your application for coverage under the General Waste Discharge Requirements (WDR) for the In-Situ Chemical Oxidation (ISCO™) injection using activated sodium persulfate or sulfate enhancement using magnesium sulfate and sodium hydroxide activator at to remediate groundwater contamination beneath the subject site (Site).

Rapid Gas, Incorporated (hereinafter Discharger) owns the facility located at the corner of Imperial Highway and Ramona Street at 4558 West Imperial Highway, Hawthorne, California (Figure 1) (Latitude: N 33° 55' 50.6", Longitude: W 118° 21' 22.0"). The Site is located in an area of mixed residential and commercial properties.

The Site is an active gasoline service station consisting of four underground storage tanks (USTs) that store diesel and gasoline, two dispenser islands, and a station building.

A total of sixteen groundwater monitoring wells (MW-1 through MW-16) are associated with the Site and groundwater monitoring has been conducted since December 2000. The data from the most recent groundwater sampling event (May 2017) reported the maximum total petroleum hydrocarbons as gasoline (TPH_G) concentrations up to 2,100 micrograms per liter (µg/L), benzene up to 7.4 µg/L, methyl tertiary butyl ether (MTBE) up to 84 µg/L, and tertiary butyl alcohol (TBA) up to 9,300 µg/L. Free product (up to 0.02 foot) was measured in offsite well MW-11. Free product has been reduced to a film in onsite wells MW-1, MW-2, and MW-4. Free product recovery is performed using manual hand bailing, removing to date a total of 2,192 gallons. Depth to groundwater ranged from approximately 36 to 38 feet below ground surface (bgs) and groundwater flow direction varies from north-northwest to south, and is currently moving northeast towards a depression surrounding well MW-3.

Groundwater contamination at the Site has been mitigated by using various remedial technologies between May 2007 and June 2017 including soil vapor extraction and currently groundwater extraction.

In a revised remedial action (revised RAP) dated February 18, 2014, the Discharger's consultant, Atlas Environmental Engineering (Atlas), proposed to conduct in-situ chemical oxidation (ISCO™) injection using high pH activated sodium persulfate with hydrogen peroxide solution (SHP) to remediate the dissolved-phase petroleum hydrocarbons in the groundwater. In the revised RAP, Atlas also proposed to conduct an ISCO™ pilot test using recovery wells RW-1, RW-2, and RW-3.

In a directive letter dated February 20, 2014, the Regional Board staff concurred with the revised RAP, provided separate injection points were installed and to continue groundwater extraction events to clean up and control the groundwater plume migration. In a directive letter dated July 24, 2014, Regional Board staff concurred with the installation of new treatment wells to be used for the ISCO™ technology at the Site. In November 2014, the recovery wells were abandoned and new treatment wells TW-1 through TW-4 were installed at the Site.

On October 6, 2017 Atlas submitted a revised RAP Addendum (revised RAP Addendum) to include the scope of work using the new treatment wells. Atlas proposed to conduct ISCO™ injection using SHP or sulfate solution via magnesium sulfate (commonly known as Epson Salt) and sodium hydroxide activator through gravity fed and/or metered injection. The four onsite treatment wells TW-1 through TW-4 will be used to introduce the solution into the formation on a weekly basis. An ISCO™ pilot test will be conducted for a period of 3 months using the treatment wells to aid in the full scale application and final remedial action design. The revised RAP and the revised RAP Addendum was approved by the Los Angeles Regional Board on February 18, 2014 and November 15, 2017, respectively.

The Regional Board has determined that the proposed injections meet the conditions specified in Order No. R4-2014-0187, "General Water Discharge Requirements for In-Situ Groundwater Remediation and Groundwater Reinjection" adopted by the Los Angeles Regional Board on September 11, 2014.

Sodium persulfate, magnesium sulfate, and sodium hydroxide are permitted as an oxidation/aerobic degradation enhancement compounds in the General WDRs Order No. R4-2014-0187. To avoid material surfacing, you can go to https://www.waterboards.ca.gov/losangeles/water_issues/programs/ust/guidelines/Subsurface_injection_of_ISRR.pdf for guidance.

Enclosed are your WDRs, consisting of the General WDR Order No. R4-2014-0187, Series No. 009, including the Monitoring and Reporting Program (MRP) Compliance File No. CI-10102. This MRP and General WDRs constitute the WDRs for the proposed feasibility study and full-scale implementation, if necessary. The WDR shall not be terminated until Regional Board staff determines the WDR are no longer needed for the site cleanup.

When submitting technical WDR monitoring reports to the Regional Board per these requirements, please include a reference to MRP No. CI-10102 to ensure that the reports are directed to the appropriate file and staff. Do not combine other reports with your technical WDR monitoring reports. Submit each type of report as a separate document.

In accordance with regulations adopted by the State Water Resources Control Board (State Board) regarding electronic submittal of information, Underground Storage Tank Program (UST) monitoring reports have been electronically submitted to the State Board GeoTracker system under the UST Global ID T0603705284. To comply with the MRP under this WDR, you shall

upload the WDR monitoring reports to the State Geotracker database under the two Global IDs T0603705284 and WDR100019725.

To avoid paying future annual fees, please submit a written request for termination of your enrollment under the general permit in a separate letter when your project has been completed and the permit is no longer needed. Be aware that the annual fee covers the fiscal year billing period beginning July 1 and ending June 30, the following year. You will pay the full annual fee if your request for termination is made after the beginning of the new fiscal year beginning July 1st.

If you have any questions, please contact Dr. Eric Wu at (213) 576-6683 or email Eric.Wu@waterboards.ca.gov for issues regarding the WDRs. For questions, regarding the UST Program, please contact Ms. Chandra Tyler at (213) 576-6782 or email Chandra.Tyler@waterboards.ca.gov.

Sincerely,

Samuel Unger, P.E.
Executive Officer

Enclosures: 1. General WDR Order No. R4-2014-0187
2. Monitoring & Reporting Program No. CI-10102
3. Figure 1 Site Map Treatment Injection Wells

cc: Micah Reich, Underground Storage Tank Cleanup Fund, State Water Resources Control Board
Brian Partington, Southern California Water Replenishment District
Tim Smith, County of Los Angeles Department of Public Works, Envr. Program
Karl Kerner, Atlas Environmental Services, Inc.
Jasmine Senn, Atlas Environmental Services, Inc.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM CI NO. 10102

FOR

FORMER RAPID GAS STATION #35
4558 WEST IMPERIAL HIGHWAY, HAWTHORNE, CALIFORNIA
(IN-SITU CHEMICAL OXIDATION FOR GROUNDWATER CLEANUP)
(ORDER NO. R4-2014-0187, SERIES NO. 009)

I. REPORTING REQUIREMENTS

A. Rapid Gas, Incorporated (hereinafter Discharger) shall implement this monitoring program on the effective date of this Monitoring and Reporting Program (MRP). The first monitoring report under this MRP, for the period from July to December 2017, shall be received at the Los Angeles Regional Board by January 15, 2018. Subsequent monitoring reports shall be received at the Regional Board according to the following schedule:

Monitoring Period	Report Due
January – June	July 15
July – December	January 15

The Discharger shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the MRP to the State Water Resources Control Board (State Board) GeoTracker database, Attention: Information Technology Unit.

If there is no discharge or injection during any reporting period, the report shall so state.

B. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the State Board Division of Drinking Water - Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be provided each time a new and/or renewal certification is obtained from ELAP.

C. The method limits (MLs) employed for effluent analyses shall be lower than the permit limits established for a given parameter, unless the Discharger can demonstrate that a particular ML is not attainable and obtains approval for a higher ML from the Los Angeles Regional Board Executive Officer (Executive Officer). The Discharger shall submit a list of the analytical methods employed for each test and the associated laboratory quality assurance/quality control (QA/QC) procedures upon request by the Los Angeles Regional Board.

D. Groundwater samples must be analyzed within allowable holding time limits as specified in 40 CFR Part 136. All QA/QC samples must be run on the same dates when samples were actually analyzed. The Discharger shall make available for inspection and/or submit the QA/QC documentation upon request by Los Angeles Regional Board staff.

E. Each monitoring report must affirm in writing "All analyses were conducted at a laboratory certified for such analyses by the State Board ELAP and in accordance with current United States Environmental Protection Agency (USEPA) guideline procedures or as specified in this Monitoring Program." Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report.

F. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with WDRs. This section shall be located at the front of the report and shall clearly list all non-compliance with WDRs, as well as all excursions of effluent limitations.

G. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

H. If the Discharger performs analyses on any groundwater samples more frequently than required by this MRP using approved analytical methods, the results of those analyses shall be included in the report.

I. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with the requirements and, where applicable, shall include results of receiving water observations.

J. The Discharger should not implement any changes to the MRP prior to receiving Executive Officer's written approval.

K. In accordance with regulations adopted by the State Board regarding electronic submittal of information, UST monitoring reports have been electronically submitted to the State Board GeoTracker database under the UST Global ID T0603705284. To comply with the MRP under this WDR, the Discharger shall upload the WDRs monitoring reports to the GeoTracker database under both Global ID Nos. T0603705284 (continuing) and WDR100019725 (new).

II. DISCHARGE MONITORING REQUIREMENTS

The reports shall contain the following information regarding injection activities:

1. A location map showing the application area (refer to Figure 1 site map). Groundwater monitoring wells shall not be used as injection points to avoid reduction of groundwater monitoring network, data bias, well screen clogging and alteration.

2. Written and tabular summary defining depth of insertion and depth to groundwater; the quantity of ISCO™ injection (sodium persulfate, magnesium sulfate, and sodium hydroxide) per area injected into the groundwater; a summary describing the days on which the injection was conducted; and the total amount of ISCO™ injection applied to the site.

3. Groundwater monitoring wells shall mot be used as injection points to avoid reduction of groundwater monitoring network, data bias, well screen clogging, and alternation.

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS[1]
Sodium Persulfate delivered per location	Gallons and Concentration	---	Semi-Annually
Sulfate enhancement using Magnesium Sulfate delivered per location	Gallons and Concentration	---	Semi-Annually
Sodium Hydroxide delivered Per location	Gallons and Concentration	---	Semi-Annually

III. GROUNDWATER MONITORING PROGRAM

The Discharger shall conduct groundwater monitoring at the site. The Executive Officer may change the monitoring program at any time during remediation. Groundwater samples shall be collected, at a minimum, from upgradient groundwater monitoring wells MW-3, MW-5, and MW-7, source area groundwater monitoring wells MW-2 and MW-4, and downgradient groundwater monitoring wells MW-1, MW-6 and MW-9 (Figure 2) on a semi-annual schedule to monitor the effectiveness of the in-situ groundwater remediation. Groundwater shall be monitored for the duration of the remediation in accordance with the following monitoring program:

CONSTITUENT	UNITS	TYPE OF SAMPLE	MINIMUM FREQUENCY OF ANALYSIS[1]
Total petroleum hydrocarbons as gasoline (TPH_G) and as diesel (TPH_D)	µg/L[3]	Grab	Semi-Annually
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	µg/L	Grab	Semi-Annually
Methyl tertiary butyl ether (MTBE), Tertiary butyl alcohol (TBA), Tertiary amyl methyl ether (TAME), Di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE)	µg/L	Grab	Semi-Annually
Naphthalene Ethanol Formaldehyde Acetone	µg/L	Grab	Semi-Annually
Total dissolved solids, Arsenic, Boron, Chloride, Bromide, Sulfate, Lead, Nickel, Cadmium, Manganese	mg/L[4]	Grab	Semi-Annually
Oxidation-reduction potential (ORP)	Millivolts	Grab	Semi-Annually
Dissolved Oxygen	µg/L	Grab	Semi-Annually
Dissolved Ferrous Iron	µg/L	Grab	Semi-Annually
Total Chromium and Hexavalent Chromium[2]	µg/L	Grab	Semi-Annually
pH	pH units	Grab	Semi-Annually
Temperature	$^0F/^0C$	Grab	Semi-Annually
Groundwater Elevation	Feet, mean sea level and bgs	In situ	Semi-Annually

1. One week before injection and semi-annually thereafter.
2. The Discharger is required to monitor for total chromium and hexavalent chromium in the baseline, second and fourth semi-annual sampling. If detected at any of these sampling events, the total chromium and chromium six must be monitored semi-annually thereafter.
3. µg/L = microgram per liter.
4. mg/L = milligram per liter.
5. bgs = below ground surface.

All groundwater monitoring reports must include, at a minimum, the following:

a. Well identification, date and time of sampling;
b. Sampler identification, and laboratory identification;
c. Semi-annual observation of groundwater levels, recorded to 0.01 feet mean sea level, and calculated groundwater flow direction.

IV. MONITORING FREQUENCIES

Specifications in the MRP are subject to periodic revisions. Monitoring frequencies may be adjusted to a less frequent basis or parameters dropped by the Executive Officer if the Discharger makes a request and the Executive Officer determines that the request is adequately supported by statistical trends of monitoring data submitted.

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration:

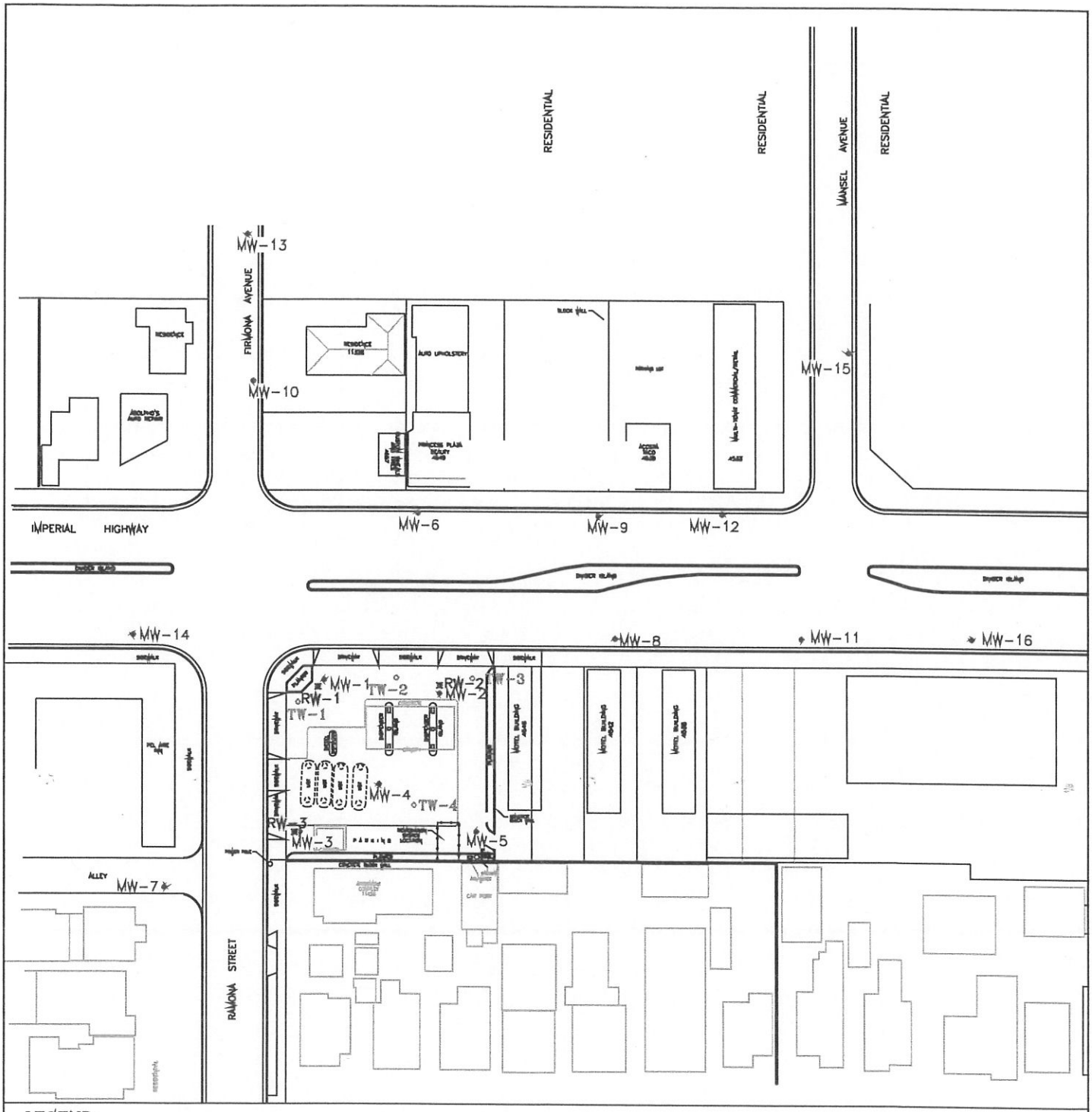
> "I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.
>
> Executed on the _____day of _____ at _____.
>
> _____ (Signature)
>
> _____ (Title)"

VI. PUBLIC DOCUMENTS

These records and reports are public documents and shall be made available for inspection during normal business hours at the office of the Los Angeles Regional Board, upon request by interested parties.

Ordered by: Samuel Unger
Samuel Unger, P.E.
Executive Officer

Date: November 16, 2017



LEGEND:

TW-4 4"-DIA. TREATMENT WELL

MW-16 4"-DIA. MONITORING WELL

RW-3 4"-DIA. ABANDONED RECOVERY WELL

NORTH	Design By: EFD	Drawn By: EFD/DJP	Rev. Date: 4/8/2015
	SCALE 0 80' DIMENSIONS IN FEET		

Atlas
- Environmental Products and Services
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FORMER RAPID GAS, INC.
STATION #35

4558 W. IMPERIAL HIGHWAY
HAWTHORNE, CALIFORNIA

TREATMENT WELL LOCATIONS

DRAWING NUMBER: R35-41437

FIGURE 1